

AUTHOR: Sumenkov, K., Zhukovskiy, Moscow Oblast' 107-9-29/53

TITLE: The Control of the Frame Synchronization in the TV-Receiver
"T-2 Leningrad" (Regulirovka kadrovoy sinkhronizatsii v tele-
vizore "T-2 Leningrad")

PERIODICAL: Radio, 1957, # 9, p 41 (USSR)

ABSTRACT: This article describes in detail the causes of disturbance of frame synchronization. The main reasons are the bias voltage drop at the control grid of the tube designated by "J18" in the circuit-diagram accompanying this article and the method of re-establishing the exact bias voltage. In case of a strong video-signal at the input (at distances from the TV-center not exceeding 10 km), the divider-voltage must not be higher than 11 volts, in case of a medium field intensity (at distances of 40-50 km from the TV-center), not higher than 9.5 volts and in case of a long distance reception (80-100 km), not higher than 8-8.5 volts.

The article contains 1 figure.

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BELYAMEV, V.F., gornyy inzh.; PYASTOLOV, A.V., gornyy inzh.; SUMENKOV, M.S.,
gornyy inzh.; SAVIN, V.Ye., gornyy inzh.

Technical and economic estimation of the possibility of using
artificial means of supporting rocks. Gor. zhur. no.9:26-27
S '62. (MIRA 15:9)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut
mednoy promyshlennosti, Sverdlovsk.
(Strip mining) (Mine timbering)

BELYAYEV, V.F., inzh.; SUMENKOV, N.S., inzh.; PYASTOLOV, A.V., inzh.;
SAVIN, V. Ye., inzh.

Reinforcement of rocks to control deformations of the benches
and slopes of strip mines. Shakht. stroi. 8 no. 54-7 My'64
(MIRA 1787)

1. Ural'skiy nauchno-issledovatel'skiy i.proyektnyy institut
mednoy promyshlennosti.

LOZHIN, A.F.; SYCHEVA, T.V.; SUMENKOV, V.G.

Reducing firing of natural pyroclusite in a tubular revolving furnace. Uch. zap. Perm. gos. un. 17 no.1:97-102 '60.

(MIRA 14:11)

(Pyrolusite)

SUMENKOVA, N. I.

Terrestrial mollusks of the Syugaty Mountains. Trudy Inst. zool.
AN Kazakh. SSR 16:169-176 '62. (MIRA 15:10)

(Syugaty Mountains—Mollusks)

SUMENKOVA, N. I.

Biology of *Brachylaemus fuscatus* (Rud., 1819). Trudy Inst. zool.
AN Kazakh. SSR 16:166-168 '62. (MIRA 15:10)

(Chilik Valley—Parasites—Mollusks)
(Chilik Valley—Trematoda)

PANIN, V.Ya.; SUMENKOVA, N.I.

Developmental cycle of *Brachylaemus aequans* Looss, 1899 (Trematoda,
Brachylaemidae). Trudy Inst. zool. AN Kazakh. SSR 19:83-88 '63.
(MIRA 16:9)

(Alma-Ata Province—Trematoda)

SUMENKOVA, N.I.

Relation between the dynamics of the nematode fauna of mushrooms
and the conditions of their cultivation. Trudy Gel'm. lab. 14:221-
233 '64. (MIRA 17:10)

A new species *Cervidellus devimucronatus* nov. sp. (Nematoda;
Cephalobidae). Ibid.:234-237

SUMENKOVA, N.I.

The new species *Panagrolaimus longicaudatus* n. sp. (Nematoda: Panagrolaimidae) from soils under mushroom cultures. Trudy Gel'm. lab. 16:143-146 '65.

Effect of mushroom culture soils on the soil nematodes of greenhouses. Ibid.:147-152

Comparative analysis of the nematode fauna on the state o farms "Teplichnyi" and "Zarech'e" (Moscow Province) and the harmfulness of discovered nematodes. Ibid.:153-160
(MIRA 19:2)

SUMERA, Franciszek, inz.

Development of the scope of production of the M-7 Engineering Works.
Wiad elektrotechn 28 no.5:127-130 My '61.

SUMERA, Franciszek, inz.

New electric motor series produced by the TAMEL Works. Wiad
elektrotechn 31 no. 5:89-91 My '63.

MICRA, Z.

Remarks on the factory fund in 1958.

P. 301. (ODNIEC) (Lodz, Poland) Vol. 8, no. 12, Dec. 1957

10: Monthly Index of East European Accession (EMI) LC Vol. 7, No. 5, 1958

SCHWAB, H.

Problems of prices in the clothing industry.

n. 13. (GEMISZ) (Lodz, Poland) Vol. 9, no. 1, Jan. 1958

XX: Monthly Index of East European Accession (EEAI) EC Vol. 7, No. 5, 1958

SUMERAUER, Frantisek

Information from some American and British corrugated
paper factories. Papir a celulosa 19 no.4:116-124 Ap '64.

1. Jihoceske papirny, zavod Ceske Budejovice.

AVERBUKH, A.G.; GORBACH, L.M.; SUMERINA, E.P.

Physical nature of waves arriving first, recorded in observations
by the correlation refracted wave method. Prikl. geofiz. no.36:
38-49 '63. (MIRA 16:9)

(Seismic waves)

"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653920003-2

AVERBUKH, A.G.; ZANTOV, V.I.; SUMERINA, E.P.; GORBACH, L.M.

New data on the geology of southern Moldavia. Sov. geol. 8 no.5:112-113
May '65.
(MIRA 18:7)

APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653920003-2"

86-58-4-24/27

AUTHOR: Sumerkin, G. A., Engr-Maj, and Gryuntal', L. L., Engr-Capt

TITLE: New Method - Better Results (Novyy metod - luchshiye rezul'taty)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 4, 87 (USSR)

ABSTRACT: The authors describe the new method used in their unit for carrying out periodic maintenance work prior to every winter and summer training period. By this method not a whole squadron but a single aircraft at a time undergoes the necessary maintenance work. This is done by the airfield aircraft maintenance unit (TECH). Three aircraft are simultaneously in TECH. In this manner it takes a month to get all aircraft of the unit ready for the next training period.

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 1. Airplanes - Maintenance

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SUMMERSKA, T.

4E2CCP
4 ESD
1-88 (WB)

*Rearrangement of hydrazones into amidines. IV. Preparation of certain aromatic *N*-(*p*-iodophenyl)-substituted amidines.* St. Robev and T. Summerska. Compt. rend. 780 J. Acad. bulgare sci. 12, 137-141 (1969) (in Russian); cf. C.A. 60, 138384.—Reactions according to the scheme $\text{ArCH}_2\text{-NNHAr}' \rightarrow \text{ArC}(\text{NH}_2)\text{-NAr}'$ were carried out to det. the role of various substituents in the aromatic rings. Four new *N*-(*p*-iodophenyl)-substituted amidines have been synthesized. Benzaldehyde *p*-iodophenylhydrazone 1.61 and anhyd. xylene 20 was heated to boiling, NaOH, 0.2 added, the mixt. stirred till all the NH₂ evolved, gently boiled 1 hr., H₂O 50 added, the aq. layer discarded, the xylene layer extd. twice with 5% HCl 50, the exts. combined, shaken with activated C 0.2 part, filtered, and the filtrate made alk. with 20% NaOH till the formation of a milky suspension, from which the cryst. *N*-(*p*-iodophenyl)-benzamidine (I) soon sepd. Recrystn. from dil. alc., then from ligroine yielded 63% product, m. 138-41°. I 0.23 in (AcO)₂O 2 was boiled 0.8 hr., kept a day, H₂O 0.1 part added, and the soln. neutralized with 20% NaOH. In 2-3 days the product solidified; one recrystn. from dil. alc. yielded *N,N'*-diacetyl *N*-(*p*-iodophenyl)benzamidine 0.19 part, m. 174-7°; repeated recrystn. increased the m.p. to

181-2°. *p*-Tolualdehyde 2.4 in alc. 10 and *p*-iodophenylhydrazine 4.00 in alc. 20 in the presence of some glacial AcOH cooled to -10°, and the ppt. washed with cold 80% alc. 10 parts yielded 80% *p*-tolualdehyde *p*-iodophenylhydrazone (II), m. 141-2°. Following the above procedure, II 1.66 yielded *N*-(*p*-iodophenyl)-*p*-methylbenzamidine 0.73 part, m. 180-2°. Similarly piperonal *p*-iodophenylhydrazone 1.3 yielded crude *N*-(*p*-iodophenyl)-3,4-methylenedioxobenzamidine 0.95 part, m. 137-40°; the pure compnd. m. 140-7°. Finally anisaldehyde *p*-iodophenylhydrazone 1.74 yields *N*-(*p*-iodophenyl)-*p*-methoxybenzamidine 0.97 part, m. 162-4°. V. Study of certain, under ordinary conditions unstable, arylhydrazones with respect to their tendency to undergo amidine rearrangement. St. Robev. Ibid. 141-4.—The expts. show that *o*- and *m*-tolylhydrazones can rearrange to the amidines: benzaldehyde *o*-tolylhydrazone yields 23% *N*-(*o*-tolyl)benzamidine, m. 109-10°; piperonal *o*-tolylhydrazone yields 31% *N*-(*o*-tolyl)-3,4-methylenedioxobenzamidine, m. 131-3°; anisaldehyde *o*-tolylhydrazone yields 47% *N*-(*o*-tolyl)-*p*-methoxybenzamidine, m. 60-1°; benzaldehyde *m*-tolylhydrazone yields 36% *N*-(*m*-tolyl)benzamidine, m. 108-9°; and finally anisaldehyde (*m*-tolyl)hydrazone yields 23% *N*-(*m*-tolyl)-*p*-methoxybenzamidine m. 107-8°. Ihor J. Masnyk

Examination of certain ...

S/081/62/000/020/012/040
B158/B101

derivative, m.p. 182°C; and nitrate, m.p. 200-201°C (decomp.). The following are obtained similarly (the product obtained, yield %, m.p. in °C and m.p. in °C of HC, HB and HI are given): I, 87, 195-196 (from benzene-dioxane, 1:2), 206-207 (from alcohol), 297-298, 220-223; II, 63, 213 (from alcohol-benzene, 3:1), 205-206, 210-212, 201-202; III, 79, 179-180 (from alcohol), -, -, -. A mixture of 2 millimoles of IV and 0.5 g Zn are heated for 1 hr at 200°C, cooled, extracted with 5 ml hot C₆H₆, then with 15 ml ether, the combined extract treated three times with 20 ml 2% HCl and C₆H₅CN is obtained from the organic layer; the aqueous layer is acidified and 4-nitro-aniline (V), m.p. 146°C, is obtained; Similarly, V and 3-nitro-n-toluic nitrile are obtained from I, and V and 3-nitro-anisic nitrile from II. 10 ml 10% H₂SO₄ is added to a mixture of 6.25 millimoles of I and 1 g Zn; after 2 hours the filtrate is made alkaline with KOH solution, extracted with 400 ml hot C₆H₆ and N-(i-aminophenyl)-benzamidine; a yield of 68%, m.p. 121°C (from benzene-ligroin), is obtained from the organic layer. [Abstracter's note: Complete translation.]

Card 2/2

CHUPV.S.; SUMARPA, J.

Studies on toxic properties and composition of complex *Salmonella gallinarum* antigens obtained from bacterial suspension treated and untreated with ultrasonics. Sov. mikrobiol. vest. (initial) 19-35 '64

Purification of complex *Salmonella gallinarum* antigen by the fractionation on ion-exchange Dextranulose and gel filtration (tbl. 19-25)

GUJUFOV, S.; SUMERSKA, T.

Attempts to purify the *Salmonella gallinarum* complex O antigen by fractionation over ion-exchange DEAE-cellulose and gel-filtration. Dokl. Bolg. akad. nauk 17 no.5:499-502 '64.

1. Submitted by Academician Al. Toshkov.

KARGOV, O.N.; SUMEROV, N.P.

Automatic switching off of the hoist meter in case of a heavily strained cable. Razved i prem. geofiz. no.24:56 '58. (MIRA 11:12)
(Prospecting--Geophysical methods--Equipment and supplies)

S.S.C.W., V. A., Geno Tech Ser — (uicc) "Steam drying in the flex trust,"
Kostinoye, 1960, 10 pp (Moscow Textile Institute)
(HL, SIC-3, 100)

L 59351-65 EWT(n)/T JAJ
ACCESSION NR: AP5019334

UR/0020/64/157/003/0656/0659

AUTHOR: Dubinin, M. M.; Kadlets, O.; Zukal, A.; Sumets, B.

21
19
D

TITLE: Carbon adsorbents with molecular sieve properties

SOURCE: AN SSSR. Doklady, v. 157, no. 3, 1964, 656-659

TOPIC TAGS: physical chemistry, carbon product, adsorption, molecular physics

Carbon adsorbents with molecular sieve properties were obtained by heat treatment to 970-980° in an atmosphere of gases containing no substances with oxidizing functions. The adsorbents were washed with distilled water at about 100° to remove residual organic impurities. The adsorbent was investigated as an adsorbent for benzene vapors at -78° and 20°. Benzene was adsorbed on the adsorbents at -78° and 20°. The data are given below.

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L 59351-65

ACCESSION NR: AP5019334

2

accessibility of the microporous structure of the charcoal for oxygen molecules, revealed that benzene and nitrogen are adsorbed chiefly on the outer surfaces of the charcoal pores, while its diffusion into the pores is impossible to them. The question of whether the irregular sieve properties of the charcoal are due to the smallness of the dimensions of the micropores themselves or to the narrowness of the openings into the micropores was solved by supplementary activation of the charcoal with gaseous substances to a combustion loss of 5-10%; increasing the dimensions of the openings into the micropores in this way made them accessible for cyclohexane molecules.

Orig. art. has: 3 graphs, 1 table.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk ChSSR (Institute of Chemistry, Academy of Sciences ChSSR); Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Chemistry, Academy of Sciences SSSR)

SUBMITTED: 13 Apr 64
NR REF Sov: 008

ENCL: 00
OTHER: 001

SUB CODE: GC, MT
JPRS

Card 2/2 4/80

SUMETS', O. M. & NAZARENKO, V. T.

Device for determining the friction coefficient of precipitates
moving along the walls of a centrifuge rotor. Khim. prom. [Ukr.]
no.1:69-72 Ja-Mr '62. (MIRA 15:10)

(Centrifugation)

SUMETSKIY, A.Sh., inzh.

Automatic counter of folded metal sheets. Mekh.i avtom.proizv.
15 no.8:45-47 Ag '61. (MIRA 14:9)
(Counting devices)

SUMETSKIY, I.Sh., gornyy inzh.; MAKAROV, A.S., gornyy inzh.

Compressed air pressure regulators for pneumatic rock drill
mountings. Gor.zhur. no.10:49-51 O '60. (MIRA 13:9)

1. Zavod "Pnevmatika", Leningrad.
(Rock drills) (Pressure regulators)

SUMETSKIY, I.Sh., inzh.; CHUDOVICH, G.M., inzh.

Mobile drilling rigs. Gor. zhur. no.4:54-56 Ap '61. (MIRA 14:4)

1. Zavod "Pnevmatika", Leningrad.
(Rock drills)

L 12356-65 ASD(d)/ASD(e)-5/SSD/APIC(b)/APAL/ESD(c)/ESD(gs)

ACCESSION NR: AP5000440

S/0231/64/000/006/0051/0054

AUTHOR: Sumin, A. R. (Aspirant)

TITLE: Load capacity of sheathing for communication cables

SOURCE: Moscow, Vses. n.-i. inst. zh. -d. transporta, Vestnik, no. 8,
1964, 51-54

TOPIC TAGS: communication equipment, sheathing, transportation

Abstract: The protection of railroad communication cables from the galvanic action of traction circuits is discussed. A study of the load capacity of the protective coverings on the communication cables indicated that it is advisable to connect the armored covering of these cables to the rails in the traction circuit. The maximum constant temperature to which the coverings of the main connecting cables may be subjected should not exceed 40°C which corresponds to a temperature rise $\Delta T=20^{\circ}\text{C}$ over the ambient temperature. Studies indicated that the protective coverings of main cables are capable of passing currents from 210 to 375 amps for protracted periods while the coverings of branch cables will sustain a current

Card 1/2

L 12456-65

ACCESSION NR: AP5000440

of 60 to 115 amperes with the indicated temperature rise. The sheathing of the main connecting cables is capable (with regard to overheating) to withstand for 30 minutes currents exceeding the permissible value by 1.5-2 times. The protective sheathing on T2B 3X4X1.2, T2B 7X4X1.2 and M2B 7X4X1.2 communication cables is capable of passing currents for 10 minutes which exceed the maximum allowable value by 1.5-2 times. Empirical curves are given for evaluating the actual resistance of the sheathing in relationship to the current flowing in the cable. Orig. art. has: 1 figure, 2 tables, and 3 graphs.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: EE, GO

NO. REF SOV: 004

OTHER: 000

JPRS

Card 2/2

SUMIN, A.A., inst.

Grounding of communication cables to the rails of electrified a.c.
railroads. V st.TAII NII 24 no.311-46 '75.

(MIRA 18:8)

1. Uralskoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo
instituta zheleznychennogo transporta Ministerstva putey
soobshcheniya.

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General Director of the Foreign Service

2

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CIA-RDP86-00513R001653920003-2"

SUMETSKIY, I.Sh.; IVNENKO, A.Ya.

Automatic regulator for pumping stations. Gor. zhur no.4:75-76 Ap '63.
(MIRA 16:4)

(Pumping stations) (Automatic control)

SUMI, Franc

Depth determination by means of gravimetrical sounding. Geologija
Slov 6:303-312 '60 (publ.'61).

SUMI, F.

"Gravity in applied geophysics." Reviewed by F.Sumi. Rud met
zbor no.1:55-56 '62.

SUMI, F.

"Applied geophysics, U.S.S.R." Reviewed by F. Sumi.
Rud met zbor no.3:270 '62.

"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653920003-2

SUMARENKO, Ye.N.

Pathogenic mycoflora of flowering plants in the Central Urals.
Zap. Sverd. otd. VZO no.38167-1.3 '64 (MIRA 18:2)

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CIA-RDP86-00513R001653920003-2"

SUMIL'OVSKIY, N. N.

Lomonosov, Mikhail Vasil'evich

M. V. Lomonosov - founder of Russian instrument making." I. B. Litinetskii.
Review by N. N. Sumilovskiy. Izv. nauk, 47, no. 2, 1952.

Monthly List of Russian Acquisitions. Library of Congress. November 1952. UNCLASSIFIED.

SUMIN, A.

Sumin, A. - "Improving the industrial organization of labor in Soviet Latvia,"
Bol'shevik Sov. Latvii, 1949, No. 5, p. 28-32

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

SUMIN, A. (Riga)

Using the balance sheet method in planning the economy of a
republic. Vop.ekon. no.1:74-82 Ja '59. (MIMA 12:1)
(Latvia--Economic policy)

SIDOROV, I.N.; KUKLIN, I.S.; KHRUSHCHEV, G.N.; SHTUKATUROV, K.M.; ROZOV,
B.V.; BUDKOV, V.Ye.; VANYUSHIN, N.M.; GICHKO, V.A.; SUMIN, A.A.

Hydraulic breaking of hauls in the Kizel Basin coal mines. Ugol'
(MIRA 15:2)
37 no.3:16-18 Mr '62.

1. Gornogeologicheskiy institut Ural'skogo filiala AN SSSR (for
Sidorov, Kuklin, Khurshchev, Shtukaturov). 2. Kombinat Kizelugol'
(for Rozov, Budkov, Vanyushin, Gichko, Sumin).
(Kizel Basin--Hydraulic mining)

ACHKASOV, V.I., kand. ist. nauk, kapitan 1 ranga; BASOV, A.V.,
kand. ~~voyenno-morskikh nauk~~ kapitan 2 ranga; BOL'SHAKOV,
N.V., kapitan 1 ranga zapasa; GEL'FOND, G.M., dots.,
kand. voyenno-morskikh nauk kapitan 1 ranga; MORDVINOV,
R.N., kand. voyenno-morskikh nauk kapitan 1 ranga zapasa;
NOSYREV, V.N., podpolkovnik; SUMIN, A.I., kand. ist. nauk
~~kapitan 1 ranga~~; PITERSKIY, N.A., kand. voyenno-morskikh
nauk kontr-admiral zapasa, otv. red.; KARASEV, A.Ye., red.
kapitan 1 ranga zapasa

[Battle history of the Soviet Navy] Boevoi put' Sovetskogo
Voenno-Morskogo Flota. Moskva, Voenizdat, 1964. 620 p.
(MIRA 17:7)

SUMIN, A.R.

Experiment at the Tatarsk traction substation. Elek. i tepl. tsiaga
4 no. 5:22 My '60. (MIRA 13:7)

1. Nachal'nik remontno-revisionnogo tschka Tatarskogo uchastka
energosнabzheniya.
(Tatarsk--Electric railroads--Substations)

KARYAKIN, R.N., kand.tekhn.nauk (Moskva); KUZNETSOV, V.... inzh. (Moskva);
PUPYGIN, V.N., kand.tekhn.nauk (Moskva); SMIN, A.P., inzh. (Moskva)

Selection of effective networks and optimal parameters of the
power take-off circuits of a.c. traction substations. Elektrichesye
no.11:10-18 N '64. (MJRA 38:2)

SUMIN, A.R., inzh.

Labor safety on electrified sections. Put' i put.khoz. 7 no.12;
42-43 '63. (MIRA 16:12)

SUMIN, A.R., aspirant

Load capacity of the protective coating of communication cables. Vest.
(MIRA 17;10)
TSNII MPS 23 no.6:51-54 '64.

MAR'YANOV, Nestor Timofeyevich; SUMIN, I.P., otvetsvennyy redaktor;
NADEJINSKAYA, A.A., tekhnicheskiy redaktor

[Manual for section electricians in mines] Pamiatka uchastkovogo
elektroslesaria shakhty. Moskva, Ugletekhizdat, 1956. 85 p.
(Electricity in mining) (MLRA 9:7)

SUMIN, I. F. Cand Tech Sci -- (diss) "Seeking ^{for} Study of the conditions of the safe utilization of electric power of 660 ^{volt} in the underground ^{operations} working of coal mines." Makeyevka, 1957. 18 pp (Min of Higher Education UkrSSR.

Dnepropetrovsk Order of Labor Red Banner Mining Inst im Artem), 100 copies (KL, 4-58, 83)

SUMIN, I.F., starshiy nauchnyy sotrudnik; TRYAPOCHKIN, V.A.

Using 660v in coal mining. Bezop. truda v prom. 1 no. 4:10-12 Ap '57.
(MIREA 10:6)

1. Makeyevskiy nauchno-issledovatel'skiy institut po bezopastnosti
rabot v gornoj promyshlennosti (for Sumin). 2. Nachal'nik shakhty
No.24 tresta Gukovugol' (for Tryapochkin).
(Electricity in mining)

SUMIN, Ivan Fedorovich, MIRSKAYA, V.V., otv.red.; NADEINSKAYA, A.A., tekhn.red.
ALADOVA, Ye.I., tekhn.red.

[Practical manual for electricians in mine sections] Prakticheskoe
rukovodstvo dlja elektroslesaria uchastka shakty. Moskva, Uglatekhizdat,
1958. 151 p.
(Electricity in mining)

LEYBOV, R.M., prof.; SHUMEYKO, V.I., starshiy nauchnyy sotrudnik; SUMIN, I.F.
starshiy nauchnyy sotrudnik

Flexible, shielded cables in mines. Ugol' 33 no.4:29-31 Ap '58.
(MIRA 11:4)
1. Donetskiy industrial'nyy institut (for Leybov). 2. Makeyevskiy
nauchno-issledovatel'skiy institut po bezopasnosti gornykh rabot (for
Shumeyko, Sumin).
(Electricity in mining)

SUMIN, I.F.

Investigating the dangerous effects of an electromotive force produced in grounded flexible cables. Trudy MakIII 9 no.2:
152-169 '59. (MIRA 12:8)

(Electricity in mining)

SUMIN, Ivan Fedorovich; IKHNO, Afanasiy Grigor'yevich; SHOROKHOVA, A.V.,
red.izd-va; KOROVENKOVA, Z.A., tekhn.red.

[Guide for a mine electrician] Pamiatka shakhtnogo elektro-
slesaria. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu
delu, 1960. 99 p. (MIRA 13:5)
(Electricity in mining)

SUMIN, Ivan Fedorovich; KOLOMIYTSEV, A.D., otv.red.; IL'INSKAYA, G.M.,
tekhn.red.; SHILYAR, S.Ya., tekhn.red.

[Safety provision in the operation of electric contact
locomotives in mines] Obespechenie bezopasnosti eksplua-
tatsii rudnichnykh kontaktnykh elektrovozov. Moskva, Gos.
nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 127 p.

(MIRA 13:5)

(Electric locomotives) (Electricity in mining--Safety measures)

SUMIN, I. V., SVERINA, Ye. F.

Principles for constructing blastproof battery ~~containers~~. Trudy
MakNII ll. Vop. gor. elektromech. no. 3:86-103 '60.
(MIRA 16:5)
(Mine railroads--Batteries)

SUMIN, I.F., PROKOPENKO, V.N.

Features of the electrification of mines, having steep seams being worked which are subject to sudden outbursts of coal and gas. Trudy MakNII 14. Vop. gor. elektromekh. no. 5:220-248 '62. (MIRA 16:6)
(Electricity in mining)

SUMIN T.F.

Ways of increasing the firesafety of mine haulage networks. Trudy
MakNII 14. Vop. gor. elektromekh. no.5:266-280 '62. (MIRA 16:6)
(Mine railroads--Safety measures)
(Electricity in mining--Safety measures)

KOTLYARSKIY, A.M., kand.tekhn.nauk; KOVALEV, P.F., kand.tekhn.nauk; SUMIN,
I.F., kand.tekhn.nauk; BASHKOV, A.I., kand.tekhn.nauk; SVETLICH-
NYY, P.L., inzh.

Using pneumatic power in coal mines. Ugol' 39 no.1:29-31 Ja '64.
(MIRA 17:3)

1. Makeyevskiy nauchno-issledovatel'skiy institut po bezopasnosti
rabit v gornoj promyshlennosti (for Kotlyarskiy, Kovalev, Sumin).
2. Dongiprouglemash (for Bashkov, Svetlichnyy).

L 13569-66 EWT(m)/EWF(j)/T/ENC(m) WW/RM

ACC NR: AR5011413

UR/0031/65/000/003/S038/S0;3

SOURCE: Ref. zh. Khimiya, Abs. 6255

AUTHOR: Berlin, A.A.; Samarin, Ye.F.; Surnin, I.G.; Kozlova, T.S.

TITLE: Investigation in the field of polymerizable oligomers. Synthesis and some properties of polyesteracrylates on pentaerythrite base

CITED SOURCE: Tr. po khimii i khim. tekhnol. Gor'kiy, vyp. 1(9), 1964, 105-107

TOPIC TAGS: chemical reaction, polymerization, catalysis

TRANSLATION: The condensation telomerization of pentaerythrite and the following dicarboxylic acids: sebacic, adipic, and phthalic with an addition of methacrylic acid in a ratio of pentaerythrite to the acids 1:2:6.6 in the presence of 5% of dil. (1:10) H_2SO_4 as catalyst; or using n-toluenesulfonic acid in a toluene, or benzene medium under continuous azeotropic distillation of the reaction water was carried out. Polyesteracrylates are a mixture of oligomers with a degree of polycondensation $n=2$. At $n=1$ the ester number and the bromide number were determined. The M_w was found. The polyesteracrylate was polymerized with 0.5% of benzoyl peroxide at 70° and 120° for 5 hrs. The physical-mechanical properties of polymers, such as hardness (Brinell), static bending strength and the weight loss at 240° in N_2 atmosphere were determined. N. Nikolaenko

SUB CODE: 07

Card 1/1

BERLIN, A.A.; SAMARIN, Ye.F.; SUMIN, I.G.; KOZLOVA, T.S.

Polymerisable oligomers. Synthesis and some properties of
polyester acrylates based on pentaerythritol. Trudy po khim.i
khim.tekh. no.1:105-107 '64.

(MIRA 18:12)

1. Submitted November 16, 1962.

8(3), 18(5)

SOV/112-59-2-2802

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 2, p 75 (USSR)

AUTHOR: Sumin, I. P.

TITLE: Prospects for Use of Flexible Sheathed Cables in Underground Electric-Supply Systems (Perspektivy primeneniya gibkikh ekranirovannykh kabeley v sisteme podzemnogo elektrosnabzheniya)

PERIODICAL: V sb.: Sovershenstvovaniye gibkikh shlangovykh kabeley, M., 1958, pp 25-31

ABSTRACT: The electrical equipment requirements of underground supply systems grow as energy consumption increases, voltages become higher, etc.

Operating conditions of cable in coal mines are characterized by the presence of dust, high humidity, close quarters, poor illumination, explosion-hazardous atmosphere, and moving heading mechanisms that drag cables behind them and subject their insulation to wear; this may lead to electrocution, explosion, or inflammation of mine gas, dust, etc. These facts pose particular requirements for underground electrical installations. The most important requirement is

Card 1/2

SOV/112-59-2-2802

Prospects for Use of Flexible Sheathed Cables in Underground Electric-Supply

an effective protection of gas (or dust) from electric-spark ignition. Imperfect designs of mine-type flexible cables introduce obstacles in the way of protection. GRShS and GRShSN cables have the following imperfections: low quality of core insulation, combustibility, low mechanical strength. The ground wire is laid asymmetrically with respect to the power wires in these cables which is fraught with the danger of explosion. In 1950, the first design of a flexible shielded cable (GRshSNE) was developed, and in 1954, it was improved (GRShSE-1000). Tests of the GRShSE-1000 cable revealed the following: individual shields for each core are necessary; a traveling arc is possible on a short-circuit which can ignite the cable; inadequate quality of the insulation, etc. It is pointed out that all the above defects of the GRShSE-1000 cable should be eliminated and an efficient leakage protection should be developed.

F.F.V.

Card 2/2

SUMIN, Ivan Petrovich; KUSHNEROV, Petr Ivanovich; KOS'YANENKO, Filipp
Ivanovich; OKHRIENKO, V.A., otv. red.; HERESLAVSKAYA, L.Sh.,
tekhn. red.

[Using the long hole method for coal breakage in the Kuznetsk
Basin mines] Primenenie dlinnoshpurovogo sposoba otboiki uglia
na shakhtakh Kuzbassa. Moskva, Gos.nauchno-tekhn.izd-vo lit-
ry po gornomu delu, 1960. 24 p. (MIRA 15:1)
(Kuznetsk Basin—Coal mines and mining)

SHIROKOV, Anatoliy Pavlovich; SUMIN, Ivan Petrovich; KUZ'MIN,
Gennadiy Petrovich; MINDELI, E.O., doktor tekhn. nauk,
retsenzent; DZHIMSHELEYSHVILI, Sr.P., otv. red.;
SMIRENSKIY, M.M., red.izd-va; LOMILINA, L.N., tekhn.red.

[Manless extraction of coal in Kuznetsk Basin mines] Pri-
menenie bezliudnoi vyemki uglia na shakhtakh Kuzbassa.
Moskva, Gosgortekhizdat, 1963. 174 p. (MIRA 17:1)

PETROV, N.G., kand. tekhn. nauk; SUMIN, I.P., inzh.

Continue improving the organization of blasting operations.
Ugol' 38 no.6:20-21 Je '63. (MIRA 16:8)

1. Institut gornogo dela im. A.A. Skochinskogo (for Petrov).
2. Kuznetskoye proizvodstvenno-eksperimental'noye upravleniye po vzryvnym rabotam (for Sumin).
(Blasting)

ADAMIDZE, Dmitriy Ivanovich; SUMIN, I.P., retsenzent; KOROLEVA, T.I.,
red.izd-vn; PARTSEVSKIY, V.N., red.izd-va; BOLDYREVA, Z.A.,
tekhn. red.

[Blasting operations by compressed air under high pressure]
Vzryvnye raboty s zhatym vozdukhom vysokogo davleniya. Moskva,
Gosgortekhizdat, 1963. 107 p. (MIRA 16:10)

1. Glavnyy inzhener Kuzbasskogo proizvodstvenno-eksperimental'-
nogo upravleniya po burovzryvnym rabotam (for Sumin).
(Blasting) (Compressed air)

YAKUNIN, M.K., gornyy inshener; SUMIN, I.P., gornyy inshener
[REDACTED]

Upraising by the method of detonating charges in long holes.
Vzryv. delo no.51/67317-324 '63. (MIRA 16:6)

1. Proizvodstvenno-eksperimental'noye upravleniye vzryvnykh
rabot kombinata Kuzbassugol'.
(Kuznetsk Basin—Mining engineering)
(Boring) (Blasting)

SHIROKOV, A.P., kand. tekhn. nauk; SUMIN, I.R., inzh.

Recent developments in blasting in Kuznetsk Basin mines. Vzryv.
delo no.51/8:346-360 '63. (MIRA 16:6)

1. Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut
(for Shirokov). 2. Proizvodstvenno-eksperimental'noye upravleniye
vzryvnykh rabot kombinata Kuzbassugol' (for Sumin).
(Kuznetsk Basin—Coal mines and mining)
(Blasting) (Boring)

SUMIN, I.P., gornyy inzh.; GORDEYEV, P.A., gornyy inzh.; ZOL'NIKOV, V.V.,
gornyy inzh.

Studying the effect of the length of stemming on the degree
of fracturing of the rock massif by detonating borehole charges.
Vzryv. delo no.54/11:185-189 '64. (MIRA 17:9)

1. Bachatskiy ugol'nyy razrez tresta Belovugol'.

MARTYNOV, A.F., inzh.; SUMIN, I.P., inzh.; ZOL'NIKOV, V.V., inzh.;
FAZALOV, G.T., inzh.; MANUNOV, G.D., inzh.

New method of calculating column charges. Vzryv. delo
no.55/12:29-44 '64. (MIRA 17:10)

SUMIN, I.P., gornyy inzh.; PAKHMUTOV, V.P., gornyy inzh.; ZOL'NIKOV, V.V.;
gornyy inzh.; YEROFEYEV, V.A., inzh.

Using a two-stage distribution of blastholes on stripping
benches of the Krasnogorsk open pit coal mine. Ugol' 39
no.6:30-32 Je'64 (MIRA 17:7)

1. Glavnyy inzh. VzryvPEU Kombinata ugol'nykh predpriyatiy
Kuznetskogo kamennougol'nogo basseyna (for Sumin). 2. Nachal'-
nik tekhnicheskogo otdela tresta Tomusaugol' (for Pakhmurov).
3. Rukovoditel' eksperimental'noy brigady VzryvPEU Kombinata
ugol'nykh predpriyatiy Kuznetskogo kamennougol'nogo basseyna
(for Zol'nikov). 4. VzryvPEU Kombinata ugol'nykh predpriyatiy
Kuznetskogo kamennougol'nogo Basseyna (for Yerofeyev).

SUMIN, I.P.; ZOL'NIKOV, V.V.; BAYEV, G.G.; SHERSTNEV, D.M.; LITVIN, I.F.

Improving boring and blasting operations. Ugol' 39 no.12:32-35
D 1986.
(MIRA 18:2)

1. VeryvPEU Kombinata Kuzbassugol' (for Sumin, Zol'nikov, Bayev).
2. Test Belovugol' (for Sherstnev). 3. Bachatskiy ugol'nyy
zavod (for Litvin).

YAKUNIN, M.K.; SIMIN, I.V.

Decreasing coal losses in manless long-hole mining. Ugol' 40 no.6:
24 Je '65. (MIRA 18:7)

1. VzryvPEU kombinata Kuzbassugol'.

21 (8)

AUTHORS:

Brill', O. D., Sumin, L. V.

SOV/89-7-4-13/28

TITLE:

The Excitation Curves of the Reactions $B^{11}(d, 2n)C^{11}$,
 $Be^9(\alpha, 2n)C^{11}$, $B^{10}(d, n)C^{11}$, and $C^{12}(d, n)N^{13}$

PERIODICAL:

Atomnaya energiya, 1959, Vol 7, Nr 4, pp 377-379 (USSR)

ABSTRACT:

The excitation curves were measured by employing the pile method at the initial energies of 19.0 ± 0.2 Mev of deuterons and 38.5 ± 0.4 Mev of α -particles. The foil piles were irradiated by means of a beam emitted from a cyclotron. Piles of such foils were irradiated with deuterons, which were produced from a mixture of boron and polystyrene, the polystyrene serving as a binding agent. Foils with a thickness of $5-10 \text{ mg/cm}^2$ and a boron concentration of 20-30% were used. The energy of the bombarding particles in the individual foils was determined from the range-energy curves. The reduced activity of the foils was measured by means of a Geiger counter under standardized conditions. After irradiation of the boron-polystyrene foils with deuterons, the two half-lives 20.5 and 10 min were found for the duration of the decay of the nuclei C^{11} and N^{13} . These nuclei are produced in the following reactions on boron

Card 1/3

The Excitation Curves of the Reactions $B^{11}(d, 2n)C^{11}$, SOV/89-7-4-13/28
 $Be^9(\alpha, 2n)C^{11}$, $B^{10}(d, n)C^{11}$, and $C^{12}(d, n)N^{13}$

and carbon (which are contained in the foils):

- (a) $B^{11}(d, 2n)C^{11}$, $Q = -5.0$ Mev
- (b) $B^{10}(d, n)C^{11}$, $Q = +6.5$ Mev
- (c) $C^{12}(d, t)C^{11}$, $Q = -12.5$ Mev
- (d) $C^{12}(d, n)N^{13}$, $Q = -0.28$ Mev.

The N^{13} -nuclei are produced in the foils only in the reactions $C^{12}(d, n)N^{13}$, and therefore the excitation curve of this reaction was determined by separation of the activities of N^{13} and C^{11} with respect to the half-lives by employing the method of least squares. The relative course of the excitation curve of the reaction $C^{12}(d, n)N^{13}$ agrees with the results obtained by D. Wilkinson (Ref 2). The second diagram shows the curve for the activity yield of C^{11} in a pile of boron-polystyrene foils. At low deuteron energies the curve has a maximum, which corresponds to the reaction $B^{10}(d, n)C^{11}$, and shows an increase

Card 2/5

The Excitation Curves of the Reactions $B^{11}(d, 2n)C^{11}$, SOV/89-7-4-13/28
 $Be^9(\alpha, 2n)C^{11}$, $B^{10}(d, n)C^{11}$, and $C^{12}(d, n)N^{13}$

at energies above the threshold of the reaction $C^{12}(d, t)C^{11}$.
The 2 next diagrams show the excitation curves of the
reactions $B^{10}(d, n)C^{11}$, and $B^{11}(d, 2n)C^{11}$ after separation. At
low deuteron energies, the course of the excitation curves
may differ considerably from the true curve because of the
great thickness of the foils and because of the blurredness
of the deuteron beam with respect to the energies. In the case
of an irradiation of beryllium foils with α -particles a weak
activity with a half-life of the order of 100 min is found
besides C^{11} activity. The former may be attributed only to
 $F^{18}(\tau_{1/2} = 110 \text{ min})$. The authors thank N. A. Vlasov, S. P.
Kalinin, and A. A. Oglodlin for their interest in the present
investigation. There are 4 figures and 2 references, 1 of
which is Soviet.

SUBMITTED: March 26, 1959
Card 3/3

SHIGORIN, D.N.; POMERANTSEV, N.M.; SUMIN, L.V.

Characteristics of the proton magnetic resonance spectra of the
 α and β forms of polypeptide chains. Vysokom. so ed. 3 no.4:560-
561 Ap '61. (MIRA 14:4)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.
(Peptides) (Nuclear magnetic resonance and relaxation)

21979

S/010/61, 137/002/023/026
R'01/P215

5.5400(1273,12P2,1160)

AUTHORS: Pomerantsev, N. M., Khranchenkov, V. A., Simin, I. V.,
and Simin, A. I.

TITLE: Nuclear magnetic resonance spectra of irradiated perfluoro
octadiene and perfluoro dodecadiene

PERIODICAL: Doklady Akademii nauk SSSR, v. 177, no. 5, 1961, 1153-1154

TEXT: For complicated molecules, the interpretation of the infrared
spectrum is rendered difficult because the absorption bands of the
individual functional groups are superimposed. In the nuclear magnetic
resonance (nmr) spectrum, however, the lines of the groups are well
discernible. This is proved by the nmr spectra, taken by the authors, of
the F¹⁹ nuclei in non-irradiated and irradiated perfluoro octadiene and
perfluoro dodecadiene. Irradiation was conducted at room temperature
with Co⁶⁰ (integral dose $\sim 10^{22}$ ev.g⁻¹). The apparatus for the recording
of spectra will be described in a separate paper. The CF₃ group of

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21979

S/020/61/137/005/026

3101/P203

Nuclear magnetic resonance spectra ...

trifluoro acetic acid was used as a reference standard for the chemical shift δ of F^{19} . Figs. 1, 2 show the data obtained, δ being calculated from the equation $\delta = 10^5(H_{\text{stand}} - H_{\text{sample}})/H_{\text{stand}}$, where H_{stand} is the value of the field resonance for the standard, H_{sample} is that for the fluorine of the group investigated. According to data published on fluorine compounds containing F and C only, the absorption bands of F^{19} nuclei of the CF_3 group lie in strong fields, those of the CF_2 group in weak fields, and those of the CF_1 group in even weaker fields. On the basis of these facts, the spectra obtained are interpreted as follows: The intensive band at $\delta = 5.5$ should consist of a series of unresolved lines corresponding to F^{19} nuclei of the CF_1 groups in the molecules $\text{CF}_2=\text{CF}-(\text{CF}_2)_4-\text{CF}=\text{CF}_2$ and $\text{CF}_2=\text{CF}-(\text{CF}_2)_8-\text{CF}-\text{CF}_2$. The lines of CF lying in the stronger field were not observed, probably due to their low intensity. The spectra of irradiated compounds differed from those of

X

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S/020/61/137/005/023/026
B101/B203

Nuclear magnetic resonance spectra ...

non-irradiated compounds by lines in weak fields. They are ascribed to the CF₃ groups, which had also been proven by infrared spectroscopy. Some changes in the bands of CF₂ groups should be due to the formation of branched structures. Their interpretation might be possible in the case of a better resolution. The bands of irradiated samples are wider than those of non-irradiated ones. This is explained by the viscosity of irradiated samples. Measurements at higher temperatures should lead to better resolved spectra. There are 2 figures and 4 non-Soviet-bloc references. The four references to English-language publications read as follows: J. A. Pople, W. G. Schneider, H. J. Bernstein, High-resolution Nuclear Magnetic Resonance, N.Y., 1959; H. S. Gutowsky, C. J. Hoffman, J. Chem. Phys., 21, 1259 (1951); A. Saika, W. P. Slichter, J. Chem. Phys., 21, 26 (1954); H. Muller, P. C. Lauterber, G. F. Svatos, J. Am. Chem. Soc., 79, 1807 (1957).

ASSOCIATION: Fiziko-Khimicheskiy institut im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpova)

PRESENTED: November 17, 1960, by V. A. Kargin, Academician
Card 3/4

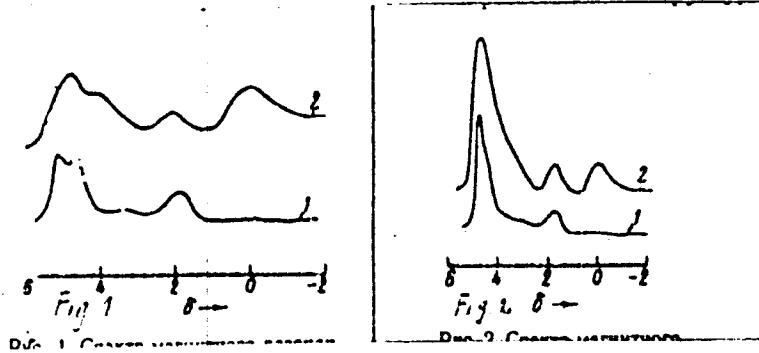
S/020/61/137/005/023/026
8101/3203

Nuclear magnetic resonance spectra ...

SUBMITTED: November 10, 1960

Fig. 1. Spectrum of nuclear magnetic resonance of F^{19} nuclei of perfluoro octadiene. Legend: (1) non-irradiated, (2) irradiated.

Fig. 2. Spectrum of nuclear magnetic resonance of F^{19} nuclei of perfluoro dodecadiene. Legend: (1) non-irradiated, (2) irradiated.



Card 4/4

СИЧЕНКО, А.А.; ЧЕЧЕВ, М.М.; ГУШКИН, Н.Н.

Average time of formation of fragment ions from n-hexane. Khim.
kat. 5 no.6:961-967 N.D '64. (MIRA 18:3)

1. Научно-исследовательский Физико-химический институт имени
Карпова, Москва.

ACCESSION NR: AP4020586

S/0057/64/034/003/0536/0545

AUTHOR: Gur'yev, M.V.; Sumin, L.V.; Tunitskiy, N.N.

TITLE: On the measurement of the kinetic energy of fragmented ions by means of a mass spectrometer. 1. Analysis of the line shape

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.3, 1964, 536-545

TOPIC TAGS: mass spectrometry, ion energy distribution, molecular ion dissociation, mass spectrometer line shape, faltung equation, nitrogen ion, nitrogen molecule ion

ABSTRACT: This paper is concerned with the measurement by means of a mass spectrometer of the energy distribution of atomic ions formed by the dissociation of excited molecular ions. To accomplish such a measurement it is necessary numerically to solve the faltung equation relating the observed line shape, the true line shape and the instrumental broadening, and then to solve a second integral equation relating the true line shape to the energy distribution in the center of mass system of the dissociating ion. These two mathematical processes are discussed in some detail. Concerning the solution of the faltung equation, the following two possibly useful suggestions are made: 1) It frequently occurs that the significant difference be-

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ACCESSION NR: AP4020586

tween the observed and the instrumental line shapes consists of relatively small deviations in one wing, the effect of which may be masked in the numerical work by random errors from the more intense central portion of the line. It is suggested that in such a case the three functions involved be replaced by their products with an appropriately chosen exponential function. The relation between the functions remains that of faltung, and the effect of the wing shape in the numerical procedure can be enhanced by properly choosing the exponential. 2) It is suggested that the sharp central peak in the true line shape (when there is such) be represented by a delta function. Means for determining the coefficient of the delta function are discussed. The integral equation relating the true line shape to the ion energy distribution is derived on the assumption that the energy distribution is isotropic, and approximate methods for solving it are discussed. The fraction of the total number of ions formed that enter the spectrometer (required for cross section measurements), and the average energy, can be obtained from the first two moments of the observed and the instrumental line shapes, without solving the faltung equation. The cross sections for production of N^+ and N_2^+ by 140 eV electron impact, and the energy distribution of the N^+ ions so produced, were determined by the methods discussed. A type MV-2302 mass spectrometer was employed, with a secondary emission

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ACCESSION NR: AP4020586

multiplier to record the ion current. The mean energy of the N^+ ions was about 3.3 eV, varying somewhat with the strength of the extracting field. The cross sections for producing N^+ and N_2^+ were equal within the 20% experimental error. This last result is not in agreement with the findings of other workers; the yield of N^+ has usually been found to be an order of magnitude less than that of N_2^+ . Orig.art. has: 22 formulas, 2 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L.Ya.Karpova, Moscow (Physical-Chemical Scientific Research Institute)

SUBMITTED: 18Feb63

DATE ACQ: 31Mar64

ENCL: 00

SUB CODE: PH

NR REF Sov: 005

OTHER: 907

3/3

Card

ACCESSION NR: AP4043615

S/0056/64/047/002/0452/0454

AUTHORS: Sumin, L. V.; Gur'yev, M. V.; Tunitskiy, N. N.

TITLE: Average momentum and energy of excitation of argon ions

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 452-454

TOPIC TAGS: excitation, molecular physics, momentum transfer,
ionization, mass spectrometry, argon

ABSTRACT: A method is described for determining the excitation energy of molecular ions, based on the measurement of the momentum transferred by the electron to the atom or to the molecule. This energy is in turn determined from the measured velocity acquired by the atomic or molecular ion. The positive ion velocity was measured with a mass spectrometer using the deflection method described by C. Berry (Phys. Rev. v. 78, 597, 1950). The experimental values of the momenta of several ions are presented, together with the cor-

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ENCLOSURE: 01

ACCESSION NR: AP4043615

Average momentum and excitation energy of several ions

1 Ion	2 Энергия ионизирующей электронной энергии E_0 , eV	$\bar{P}_x \cdot 10^3$, eV $^{1/2}$	J, eV
Ar ⁺	180	9.5±1	56±6
H ₂ ⁺	30	52±6	33±5
H ₃ ⁺	140	20±3	17.4±3
H ₂ ⁺	180	13±2	10±5
CH ₃ ⁺	90	4±2	11±11
CH ₂ ⁺	140	2±2	

1 - Ion, 2 - Electron energy E_0 , ev

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L 25244-65 EMT(1)/T IJP(c)

ACCESSION NR AP5001521

S/0020/64/159/006/1134/1136

15
12
B

AUTHOR: Sumin, L. V., Gur'yev, M. V.

TITLE: The dissociation of molecular ions

SOURCE: AN SSSR. Doklady, v. 159, no. 5, 1964, 1134-1136

TOPIC TAGS: molecular ion dissociation, local ion dissociation mechanism, dissociation by excitation, angular ion distribution, anisotropy, C_4Hg^+ ion, low energy electron impact

ABSTRACT: The dissociation of large atoms of strongly excited molecular ions occurs mainly if it is caused by positive ion migration rather than migration of the electron over the molecular ion. The process requires a time equal to the vibrational period of the atoms (10^{-8} sec.) or the local mechanism of the electron with the molecule. The atom is moving mainly in the region of dissociation of the electron with the molecule. The time of migration of the electron is about 10^{-13} sec.). This work is the original. A time of 10^{-8} sec. is obtained for the dissociation of the molecule.

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L 25244-65

ACCESSION NR: AP5001521

10⁻¹³ seconds, and estimate the probability of charge migration through the molecular ion up to its dissociation. A special method was developed based on the angular distribution of the fission ions which is isotropic, thus related to rapid dissociation only. The probability estimate was then derived from the anisotropy observed. The observations were conducted with a mass spectrophotometer, provided with a special ion source, on the C₄Hg⁺ ion from 2, 2, 4-trimethylpentane, n-octane and n-hexane. Relative measurements were also conducted for molecular and fission ions and for 2 directions of the electron beam. The excitation energy was assumed at 13 electron volt (ev) for both the fission and the molecular ion. The value amounted to about 1/3 of the observed anisotropy value. A comparison was made for the mean free path from the various molecules and the ionization rate. The share of the rapid processes among processes of ion formation was determined by comparing experimental and theoretical values. Ionization was determined by combining experimental and theoretical values. The value of 0.91 ev^{1/2} was found for the anisotropy. Thus the basic mass of the molecule was determined by the total mechanism. The reason for the variation of the anisotropy in the total mechanism is discussed. Highly energized electrons anisotropy for the various compounds is discussed. Highly energized electrons should migrate through the whole molecule without significant screening effect; then no anisotropy would be observed (electron energy 1000 ev). Results obtained

L 15244-65

ACCESSION NR: AP5001521

can only be explained by assuming the local mechanism. "The authors wish to thank V. N. Timofeiky for his continuous interest and help in this work and also thank the referee for his thorough consideration. Many thanks I have

ASSOCIATION Fiziko-khimicheskiy institut im. Iu. Ya. Karpova (Physical-Chemical Institute)

SUBMITTED: 18 Jun 64

ENCL: 00

SUB CODE: GP

REF ID: SOW 223

ATTACH: 008

Card 3/3

SUMIN, L.V.; GUR'YEV, M.V.

Method of determining the excitation energy of molecular ions.
Kin. i kat. 6 no.1 31-36 Ja-F '65. (MIRA 18:6)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

L 11089-66 EWT(1)/EWT(m)/EXP(j)/EWA(m)-2/EWA(h) IJP(c) AT/GS/RM

ACC NR: AT5023426

SOURCE CODE: UR/0000/65/000/000/0009/0011

AUTHOR: Gur'yev, M. V.; Sumin, L. V.

ORG: none

44,55 44,55

76
B+1

TITLE: Elemental processes involving electrons and ions. Dissociation of molecules due to electron impact and radiation chemistry 19,55

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1965. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 9-11 44,55

TOPIC TAGS: ion energy, ion, mass spectrum, particle collision, electron energy, excited state, mass spectrometry

ABSTRACT: Primary products of dissociation of molecules, excited by electron impact, were investigated by the mass spectrometry method. In the case of n-hexane the mass spectra of ion fragments containing two or three carbon atoms were taken using a MV23-02 instrument with a resolution (based on line half-height) of about 9000. Most of the ions of a general formula $C_n H_m$ ($m < 2n + 1$) are formed during 10^{-7} - 10^{-8} sec and for a given "n" the smaller the "m" the greater is the lifetime of these ions. A similar reaction also applies to the ion fragment kinetic energy indicating that the ions are formed during secondary disintegrations. The CH_2^+ ion is formed from

Card 1/2

ACC NR: AT5023426

CH_4^+ within $5 \cdot 10^{-8}$ sec. The C_3H_7^+ and C_2H_5^+ ions are formed in less than $5 \cdot 10^{-8}$ sec. Statistical energy distribution occurred in ion fragments. Molecule excitation energies were determined using electrons with an energy 3-4 times greater than the ionization energy. In collision with such energetic electrons, molecules assume a kinetic energy of the order of 10^{-5} ev. The accuracy determination excitation energies for H_2 and He using this method was as high as 30%. In the case of slow disintegration processes, the method can be applied successfully to all secondary ions. Orig. art. has: 1 formula.

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Cord 2/2

L 15194-66 EWT(1)/EWA(h)/EWA(1) AT/GS/RM
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SOURCE CODE: UR/0000/65/000/000/0015/0018 58

AUTHOR: Sumin, L. V.; Gur'yev, M. V.; Tunitskiy, N. N.

ORG: none

TITLE: True mass spectra and kinetic energy of ions

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963.
Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 15-18

TOPIC TAGS: mass spectrum, ion, kinetic energy, ion energy, electron energy

ABSTRACT: The problem of deviation of the actual mass spectra of ions from the corresponding true mass spectra is discussed. The larger the initial kinetic energy of an ion the greater its discrimination in the mass spectrometer. The relation between the ion energy distribution, determined from analysis of the line structure $\psi(E)$ and the initial ion energy distribution $\phi(E)$ is

$$\psi(E) = \frac{\text{const}}{V_1 V_2} E \phi(E).$$

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where V_1 and V_2 are the two dimensions characterizing the orifice of the mass spectrometer. The collection coefficient P is equal to

$$P = \text{const} \frac{f_0 k_0}{f_1 k_1 - f_0 k_0},$$

where f_0 and k_0 are experimentally determined peak areas for ion and molecule, respectively and f_1 and k_1 are initial points of the respective mass peaks. It was found that there is a significant discrepancy between the literature data on mass spectra of ions of organic compounds (e. g. n-hexane) ionized with 70 ev electrons and their true values. A partial mass spectrum of n-hexane considering the initial energy of ions is shown in fig. 1. Orig. art. has: 1 figure, 2 formulas.

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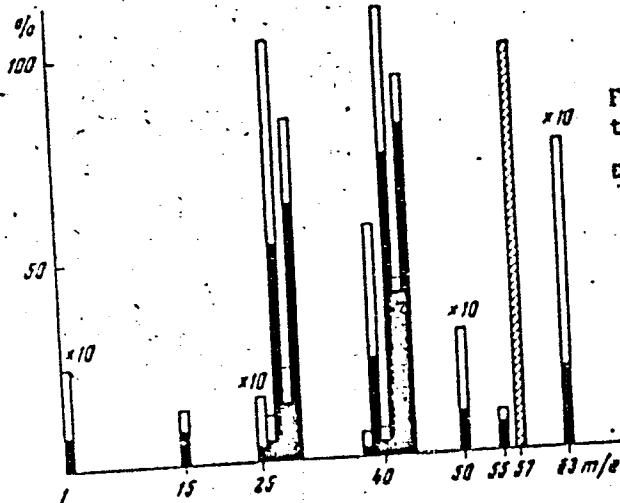


Fig. 1. ■ -mass spectra according
to handbook

■ -intensity of $m/e = 57$ line, as-
suming units of 100

□ -peak differential due to dis-
crimination.

TSB CODE: 07 / SUBM DATE: 23Feb65/
Card 3/3

SUMIN, M.

Conference on theoretical problems. Zdravookhranenie 2 no.1: no page
(given) Ja-# '59. (MIRA 12:7)

1. Zaveduyushchii kabinetom politicheskogo prosveshcheniya Krae-
noarmeyskogo Rayonnogo komiteta kommunisticheskoy partii Moldavii.
(KISHINEV--MEDICAL PERSONNEL)
(COMMUNIST EDUCATION)

SUMIN, N., predsedatel'.

Mass cultural commission of the factory committee. V pom. profaktiv 14
no. 13:17-20 J1 '53. (MLRA 6:6)

1. Kul'turno-massovaya komissiya Zavkoma Saratovskogo zavoda tyazhelogo
mashinostroyeniya. (Adult education)

1 - 1 - 3000 - 1000

Mr. A.J.S.

Rosasite from Tzyyl-Kapse deposit, N. G. Suman
(Compt. rend. Acad. sci. U.R.S.S., 1941, 31, 179-181).
The consts. (optic angle, dispersion, n, and hardness)
of rosasite from this region are given. The chief com-
ponent oxides are CuO, ZnO, CO₂, and H₂O, but the quantity
of mineral available was insufficient for complete analysis.
A.J.S.